

Sustainable Networks for the Energetic Use of Lignocellulosic Biomass in South East Europe

Work package	WP3
Title	Network analysis of biomass supply chain in Slovenia
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Table A: Status quo of ICT integration

	Orally		Analog		Internet based			Navigation System	GIS
	face-to-face	by telephone	Letter	Fax	E-Mail	Internet hosting	Online time management		
Forest Resources Management	●	●	●					●	
Contracting	●	●	●	●	●				
Harvesting + Logging	●	●							
Transporting to end consumer	●	●						●	
Chipping and other Processing	●	●			●				
Storing (Including Natural Drying)	●	●							
Manipulation	●	●			●				
Transport to sawmill	●	●						●	
Sawmill	●	●	●		●				
Administration/ Invoicing		●	●	●	●				

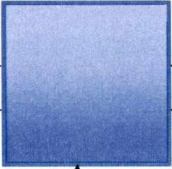


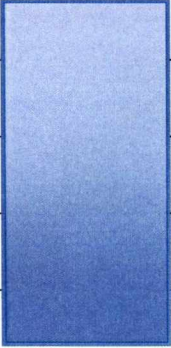
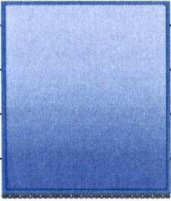



Table B: Status quo of network communication structure

	Forest owner association representative	District forester	Production manager - Logging company	Skidder operator - Logging company	Chainsaw operator - Logging company	Wood haulier - Logging company	Chairman - Chipping company	Production manager - Chipping company	Forwarder operator - Chipping company	Chipper operator - Chipping company	Truck driver - Chipping company	Manipulator	Sawmill operator	Customer	Supplier	Book-keeper
	Direct communication with ...															
Forest owner association representative		↔	↔				↔	↔				↔		↔		↔
District forester	↔			↔	↔			↔								
Production manager - Logging company	↔			↔	↔	↔						↔	↔	↔		↔
Skidder operator - Logging company		↔	↔		↔											
Chainsaw operator - Logging company		↔	↔	↔												
Wood haulier - Logging company			↔									↔	↔	↔		↔
Chairman - Chipping company	↔							↔						↔	↔	↔
Production manager - Chipping company	↔						↔		↔	↔	↔					
Forwarder operator - Chipping company								↔								
Chipper operator - Chipping company								↔			↔					
Truck driver - Chipping company								↔		↔				↔		↔
Manipulator	↔		↔			↔							↔	↔	↔	↔
Sawmill operator			↔			↔						↔		↔	↔	↔
Customer	↔		↔			↔	↔				↔	↔	↔		↔	↔
Supplier							↔					↔	↔	↔		↔
Book-keeper	↔	↔	↔			↔	↔				↔	↔	↔	↔	↔	

Please indicate processes, where persons communicate directly, using the arrow "↔". Based on this, decide which network communication structure is dominant in the supply chain. If further actors are relevant, please add them; delete irrelevant actors (E.g. in the supply chain for wood chips pellet producer/shipper/merchant are not involved at all).

Table C: Status quo of network communication structure

	Wheel network	Chain network	Circle network	All-channel network
Forest owner association representative				
District forester				
Production manager - Logging company				
Skidder operator - Logging company				
Chainsaw operator - Logging company				
Wood haulier - Logging company				
Chairman - Chipping company				
Production manager - Chipping company				
Forwarder operator - Chipping company				
Chipper operator - Chipping company				
Truck driver - Chipping company				
Manipulator				
Sawmill operator				
Customer				
Supplier				
Book-keeper				

Please indicate the identified network communication structure (the blue box is given as example). If further actors are relevant, please add them; delete irrelevant actors (E.g. in the supply chain for wood chips pellet producer/shipper/merchant are not involved at all).

Explanation:

Although various communication media are used, communication in organizations tends to flow in certain patterns. The pathways along which information flows in groups/teams/organisations are called communication networks.¹

¹ Source: SIMS, Ronald R, Managing organizational behavior, Greenwood Publishing Group, 2002, 390 pages.

A *wheel network* is a pattern in which information flows between the person at the end of each spoke and the person in the middle. Those on the spokes do not directly communicate with each other.

In a *chain network*, each member communicates with the person above and below, except for the individuals on each end, who communicate with only one person.

In a *circle network*, each person communicates with the people on both sides, but not with anyone else.

In an *all-channel network*, all members communicate with the other members.²

An explaining chart can be found in Figure 1.

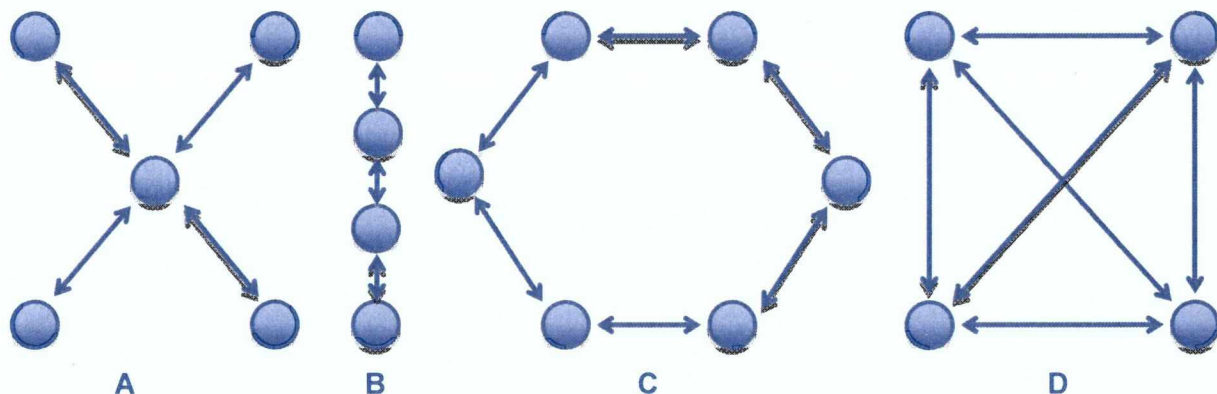


Figure 1: Network communication structure – (A) in wheel network all communication flows through one person, (B) in a chain network, members communicate with each other in a predetermined sequence based on task interdependence, (C) in a circle network each individual can communicate with two others, (D) the all-channel network (star pattern) characterizes a free flow of information among all group members. Own graphic based on GRIFFIN & MOOREHEAD (2011).

² Source: GRIFFIN, Ricky W., MOOREHEAD, Gregory, Organizational Behavior, Publisher Cengage Learning, 2011, 586 pages.

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